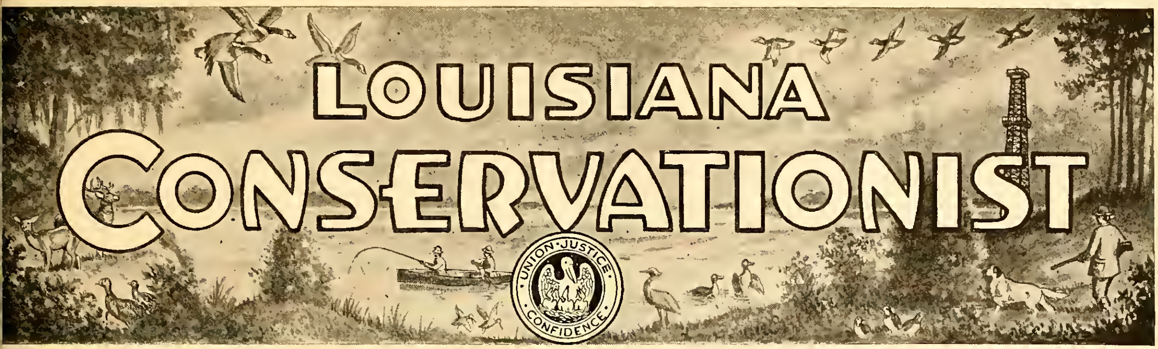


LOUISIANA CONSERVATIONIST

olume 2 AUGUST, 1944 Number 9

onger Duck, Geese eason Decreed 'or Louisiana

Louisiana duck hunters get ten tra days of shooting this year d a split season on doves, ac- rding to regulations made pub- e last week by the United States epartment of the Interior. The ason on ducks, geese and coots Poule-d'Eau) will begin Novem- er 2nd, the same as last year, it will extend through January 0th, instead of January 10th, as st year.

A split season has been pro- ded for dove hunters. There ill be a fifteen day season from ctober 15th through October 0th, and another season from ecember 10th through January 0th. The bag limit on doves mains the same, ten.

In all other respects the migra- ry hunting seasons are the same last year. There is a closed ason on Snipe. For Rails and allinules, the season will be from eptember 15 to December 15, clusive, and on Woodcock, it will e from December 15 to Decem- er 29th, inclusive. The bag limit Rails and Gallinules is 15, and e bag limit on Woodcock is 4.

The shooting hours on all migra- ry game birds is the same as st year—one half hour before inrise to sunset. The use of ait and live decoys are pro- ibited, and the legal limit of ame may be possessed 45 days fter the close of the season. unters of ducks and geese must ave a federal duck stamp at- ached to their state hunting li- ense, and these may be obtained om any postoffice at $1.00 per amp.

Bag Limits for Ducks, Geese

The daily bag limits on ducks except American and redbreasted ergansers) are 10 in the ag- regate of all kinds, including in ich limit not more than 1 wood

Continued to Page 4, Column 4)

IN THE GOOD OLE SUMMER TIME

Many Louisianians are patriotically spending their vacations at home this summer. Fishing streams all over the State have proven very popular during the hot summer months and reports indicate that fishing has been very good in many spots. Above is a typical fishing scene in Louisiana in the good ole summer time.

Anglers in U. S. Buy Eight Million Licenses Last Year

Fresh-water anglers fishing for food as well as for recreation brought $10,024,329 in revenue to the 48 States from the sale of 8,028,674 fishing licenses during the fiscal year ended June 30, 1943, according to a tabulation submitted to Secretary of the Interior Harold L. Ickes by the Fish and Wildlife Service.

Of the 8,028,674 licenses sold, 7,283,777 were purchased by residents and 744,897 by nonresidents of states, its is shown. Reports indicate that 1,601,392 combination hunting and fishing licenses were sold by States having systems which require sportsmen to buy combination licenses in order. The Service points out that their statistics do not include the vast number of anglers who are permitted to fish without State licenses along the seacoasts and in tidal waters.

In the number of licenses sold, Michigan led with 719,441.

More Shells Are Promised, Hunting Prospects Bright

With encouraging indications from all sources that more shells will be available this year for hunters, the outlook is bright for the 1944-45 hunting season in Louisiana. Available information obtained by the Department of Conservation point to the fact that shells for hunting purposes will be easier to obtain this Fall and there will be more of them.

Louisiana's hunting season gets under way on September 15th when it becomes legal to shoot Rails and Gallinules. This will be followed on October 1st with the opening of the season on squirrels, rabbits and chipmunks. The bag limit for squirrels and chipmunks is ten, but there is no limit on rabbits.

On October 15th, the first half of a split season on doves, will get under way in Louisiana, and this is to be followed on November 1st by an open season on bear. The hunting season gets in full swing in November with the opening of season on ducks, geese and coots on the second day of that month.

GEESE IN FLIGHT—Scenes such as the one pictured above will soon be familiar in Louisiana, and hunters have a longer season this year for shooting ducks and geese. (See story on migratory regulations on this page).

JIMMIE H. DAVIS
Governor of Louisiana

JOS. L. McHUGH
Conservation Commissioner

LOUISIANA CONSERVATIONIST

Published Monthly in the interest of conservation by the
Louisiana Department of Conservation
126 Civil Courts Building, New Orleans, La.

ISAAC D. CHAPMAN
Editor

Permission for publication of all material in this issue is granted on condition that we receive marked copies and that credit be given for any illustrations reproduced. Contributions and photographs will be welcomed. Each should be accompanied by stamped return envelope. Proper credit will be given on all material accepted.

Volume 2 **AUGUST, 1944** **Number 9**

Conserving Pontchartrain

(From the New Orleans Item)

Action by the Conservation Commission to close Lake Pontchartrain for five years to commercial shrimp trawls and seines is soundly in line with public policy. While it is true that the times call for emphasis on food production in every field, the 6,000,000 pounds of shrimp, which some fishermen estimate Lake Pontchartrain might yield this season, could be produced only at cost of destroying a far greater potential crop of sea food.

Trawls that are drawn behind gasoline luggers gather whatever comes within their wings into a tightly packed mass in the purse of the net. Except for a few hard crabs and durable catfish, the marine life jammed into such confinement is killed. This makes little difference in the case of shrimp, for these are immediately iced for marketing anyway. But the small fingerlings of speckled trout and other food fish thus killed are fit for nothing but to be thrown overboard to the gulls. In the coastal shallows, this is no great loss, for the teeming offshore fish-life promptly makes good the wastage. But in an enclosed and relatively small body of water like Lake Pontchartrain, natural replacement might take years to repair the destruction.

Moreover, Lake Pontchartrain is a recreation ground at the very doors of the South's most populous center of urban life. Thousands upon thousands of city dwellers here find healthful outdoor relaxation and sport each week end. In the aggregate they bring in, week by week, a very ponderable harvest of sea food that never finds its way through the market channels, but is just as important an adjunct to our supplies as are the victory gardens which so splendidly supplement commercial fresh vegetable crops. The nearness and accessibility of the Lake to those who combine pleasure with gain in fishing for sport, makes the maintenance of these waters for this purpose particularly desirable in these days of transportation shortage and gas rationing.

On every count, therefore, the Conservation Department has done a commendable thing in taking prompt steps for Lake Pontchartrain's fish preservation, regardless of any pressure that may be brought to open the Lake to commercial exploitation.

LAKE TRAWLING

(From the Times-Picayune)

Conservation Commissioner McHugh gets into the discussion of commercial shrimp trawling or seining in Lake Pontchartrain with an order closing the lake to such fishing for five years. The chances for commercial seining in the lake would not be dimmer if the order were made for twenty-five years, because it is quite clear that the people in this part of the state do not want their fishing grounds destroyed through sweeping the lake with big nets.

The commissioner used his authority under an act of 1942 to close to commercial fishing any streams in danger of depletion, after the department's chief biologist reported that the trawling or seining inevitably would destroy young game and commercial fish. The commissioner probably felt no special need for the biologist's report, since any fisherman is aware what dragging the seines through an inland lake like Pontchartrain would do to the fishing.

The statement of the head of a fishing association here that 6,000,000 pounds of shrimp could be obtained by the luggers from the lake this season, adding that much to the war food supply is not impressive. We also have to think of the millions of pounds of other fish that wouldn't be caught by amateurs and commercial fishermen if the nets were allowed.

The lake has been barred piecemeal to commercial seining for a long time, but during the depression of the thirties there was a good deal of winking at the rules. It is much better to have the overall order now in effect since the public will be in position to know that the use of anything more than a bait seine or bait trawl anywhere in the lake infringes the rules.

Pontchartrain Closed to Shrimp Fishing by Dept.

Louisiana's shrimp season in shallow waters of the State opened on August 16th, after being closed down since June 26th. Under a Legislative act of 1942, there are two closed seasons during the year on shrimp. The next closed season is between March 16th and May 15.

Just prior to the opening of the commercial shrimping season on August 16th, Conservation Commissioner Joseph L. McHugh issued an order prohibiting commercial shrimp and other fishing by use of large seines and trawls for a period of five years in Lake Pontchartrain.

The order issued by the Commissioner is as follows:

"Acting under the authority of Act 145 of 1942, a closed season to commercial fishing by means of seines, trawls, trammel nets, gill nets, hoop nets and all other commercial fish nets is hereby declared in the waters of Lake Pontchartrain for a period of five years commencing this date, such fishing being detrimental to the interests of the State of Louisiana.

"This order does not prohibit the taking of commercial fish by means of hand lines, or the taking of game fish in any legal manner. Further, the use of bait seines measuring no more than 99 feet in length and the use of bait trawls no more than 15 feet in length is permitted, provided that no more than 105 pounds of bait may be taken with one such bait seine or bait net in one day, and provided, too, that all commercial and game fish taken in such bait seines or bait trawls shall be returned to the water alive and uninjured."

In connection with the order closing Lake Pontchartrain to commercial fishing, Dr. James Nelson Gowanloch, chief biologist of the Department, issued a report in which he asserted that commercial shrimp trawls would destroy the food supply of commercial and game fish in the lake.

CADDO WILDLIFE FEDERATION MEETS

The Caddo Wildlife Federation held a big meeting and get-together at the Forty and Eight Club on Cross Lake Tuesday evening, August 22nd. A large attendance was present, including a number of state officials and officials of the Conservation Department.

A meeting of the Forestry Governing Board is scheduled to be held in Baton Rouge on Tuesday, August 29th, according to announcement by Massey H. Anderson, State Forester, and ex officio secretary of the Board.

The Economic Status of the Water Hyacinth in Louisiana

(Editor's Note—The following article by James Nelson Gowanoch, Chief Biologist of the Department of Conservation, is from an address delivered by Dr. Gowanloch before the annual meeting of the Louisiana Academy of Science held at Lafayette on April 20th).

By James Nelson Gowanloch

Nineteen hundred and forty-our marks the sixtieth anniverary of the introduction into the Deep South by way of New Oreans of the most serious plant est with which the State of Louiiana must contend. It is the purpose of this paper briefly and ompactly to survey the history of his plant's introduction, the economic damage that this plant has already effected, the possible broad methods of attack in combatting it, and certain experimental yet quite practical activities that the Wildlife and Fisheries Division of the Department of Conservation has accomplished.

First, let us survey the plant and its history. The water hyacinth, commonly but improperly known in Louisiana as "water lily", is a native of Japan. Technicaly designated **Eichornia crassipes** (a synonym with a change in generic name is **Piaropus crassipes**), this plant was carried to South America where it became widely spread. Details of its transfer from the Far East to the Western Hemisphere are not clear and at the moment American air service to Tokyo carries no mail.

When in 1884 an International Cotton Exposition was held in New Orleans, the Japanese Government representatives in their building on the Exposition grounds gave away as souvenirs water hyacinths which they had imported from Venezuela. Only yesterday the speaker had a conference with Mr. Hale Hester Bate, Chief Engineer of the Standard Oil Company in Venezuela. Mr. Bate states that the water hyacinth has long been a most serious pest in Venezuela and has practically "taken over" the lower Orinoco. Eagerly sought because of their beauty, these plants were carried far and wide by Exposition visitors. One definite episode makes clear that the introduction of the plant into Florida began when a citizen of Jacksonville transported to that city two tin pails full of them, a disastrous gift to his state. It required the passage of few years before the evil character of this Japanese plant immigrant became known. Indeed, in 1890 an agitation was begun to take some measures for its control and on June 4, 1897, Congress appropriated five thousand dollars for a study of this plant in the waters of Louisiana and of Florida. 1899, 1902, and 1912, are the dates of subsequent Congressional acts which provided funds for water hyacinth removal in Florida, Mississippi, Louisiana, and Texas, the four states into which it had by this time seriously spread.

Turning now to the characteristics of the species, they are, the speaker is sure, so familiar to you all that he need merely say that, buoyed up by its hollow tissues, the water hyacinth floats high in the water and propagates prodigiously by both seeds and off-shoots. Two crops and sometimes a third have been found to mature in a single season.

The water hyacinth wreaks heavy economic damage by impeding navigation and by destroying completely the biological structures of what were once fish productive waters. Often the speaker has witnessed the complete blockage of shrimp and oyster luggers in hyacinth infested bayous. So dense can be the growth that a 170 pound man can stand freely on this mat of vegetation fully supported by the buoyancy of the plants. The importance of such interference with water-borne traffic in the nation's most critical time of war is clear and has called for, as will be indicated below, the most energetic action on the part of the Federal authorities to keep war production materials moving on our navigable waterways. The discovery, exploration and development of the numerous and very valuable oil resources of the salt domes in the Coastal areas of Louisiana and the necessary concomitant construction of canals as the only feasible means of supply transport in much of this terrain made even more acute the navigation problems caused by the water hyacinth.

Biologically the intrusion of the water hyacinth into fish productive areas usually results in the complete ending of fish productivity in invaded waters. The speaker has repeatedly observed water areas, such as, for example, Bayou Bartholomew and Bayou De Siard near Monroe, Louisiana, where water hyacinths have jammed the stream surface from bank to bank and have attained a height of over four feet. The immediate result of such blanketing of fish inhabited waters is that the fish migrate or starve. The screening out of light penetration breaks the food chain of game and commercial fish; submerged plants die; crustacea and other fish food animal organisms that these submerged plants feed and shelter are eliminated and the waters become barren of fish. Repeatedly the speaker has found such areas where owners of homes or camps have lost entirely their investment and have been compelled to abandon, often valuable equities that have taken them years to acquire.

The Water Hyacinth (Eichornia Crassipes) is beautiful in appearance, but it is a serious plant pest. In the article beginning on this page, Dr. Gowanloch tells an interesting story of the growth of this plant pest.

One additional effect that the speaker has recently observed is that the blocking of water areas has quite evidently caused heavy concentrations of American coots in open waterfowl ponds so that the duck food supply of once valuable duck shooting areas has been completely consumed by coots before the arrival of the wintering duck population.

One additional destructive effect of the water hyacinth in relation to migratory waterfowl food supply is that not only does the water hyacinth block up needed drainage ditches, but in desirable, shallow open ponds, rafts of hyacinths break loose and, driven by the wind, may move back and forth in such a manner that through scouring action they tear up and destroy valuable submerged species of duck food plants.

It may be considerately stated that the water hyacinth ranks high indeed among the serious problems that the State of Louisiana must solve in its post-war programs. Such is the damage that this plant does.

This damage is, in certain respects, increased when water hyacinth becomes associated with alligator weed ("alligator grass"), **Achyranthes philoxeroides.** Unlike the water hyacinth, which does not appear to be capable of living on land, alligator weed apparently requires land anchorage for permanent success. Extending outward from the shore line the alligator weed often penetrates water hyacinth rafts and forms dense mats. The biology of the alligator weed has been ably discussed by Dr. Wm. T. Penfound, Professor of Botany of the Tulane University (Pehfound, 1940).

Possible control measures for water hyacinth fall into four categories: Chemical control, control by flame-thrower, mechanical control, and biological control. Briefly let us survey these.

Mr. W. E. Wunderlich, Associate Mechanical Engineer of the U. S. Engineers Department of the U. S. War Department, (Wunderlich 1938 and 1941) has provided a valuable history of chemical and mechanical water hyacinth control. The first mechanical plant was put into operation in 1900. This method was succeeded in 1902 by chemical control, except, where, in Florida,

(Continued to Page 6, Column 1)

Game Warden is Living Paradox

(Editor's Note: The following article is reprinted from the Texas GAME AND FISH and it is dedicated to Louisiana Game Wardens for their faithful service to the State).

Except perhaps for the mythical hoop-snake, nothing a fair weather sportsman is apt to encounter in the woods causes him as much uneasiness as a game warden. The very name conjures up visions of a beefy, walrus-moustached kill-joy, whose five-pointed badge of authority rides high on the crest of a generous paunch. He lies in wait beside still ponds to roar at timid fishermen.

The sportsman is not wholly to blame for this erroneous and unfair impression. Game wardens have been portrayed thusly by cartoonists and writers for lo, these many years. To them a game warden must just as naturally be a moustache toting meanie, as a policeman must have flat feet.

A written defense of game wardens would just be so much eye wash. Actually game wardens need no defense. But there is no doubt but that they could stand for a lot of understanding. Stripped down to the essentials, it soon becomes apparent that the biggest thing wrong with the average game warden (and this is going to make a lotta people mad) is the type of sportsmen he runs into. A good sportsman thinks a game warden is the salt of the earth. What a poor sportsman thinks of him must naturally be censored in any magazine that may eventually be read by the kiddies, God bless 'em.

Actually a game warden is a rather strange animal. His authority as a law enforcement officer extends just so far, yet he frequently carries the dignity of the law into remote sections seldom reached by other law enforcement agencies. Certainly, enforcing laws—the duty for which he is best known—is actually the smallest part of his job. Among other things, the efficient warden must be something of a naturalist, trapper, botanist and detective—to say nothing of a pihosopher and natural-born listener, who diplomatically clucks his tongue at the right moment when a sportsman bends his ear with details of how the big 'un "got away."

He is a living paradox, because he has an unpleasant task to do pleasantly.

Game wardens come in all types, sizes and have temperaments that run the gamut from screwball to the sublime. Therefore, there cannot be any "average" warden. You just can't work out a classification for men like you can for eggs and muskrat hides. But a composite picture of all wardens might produce a mythical one, whom we shall call Joe Doakes.

Doakes is about 35 years old, married and has two children (who perhaps wonder who he is on the few hours a week he gets to spend with them). He is a high school graduate, writes a passable hand, and keeps abreast of the times fairly well, though it's an even bet he knows more about where the bass are striking than he does about the latest European crisis. If he touches alcohol at all, it's confined to a social dram when he is off duty (this makes his value to distillers practically nil).

He smokes incessantly, and his taste in literature runs to sportsmen's magazines.

Before his appointment as a warden, he was a salesman, and while he occasionally voices a longing for the good "ole days," it would take nothing short of an earthquake to shake him off of his present job. For Nature instills in all who keep close contact with her for long a profound affection. Joe wouldn't trade the sound of a whippoorwill in the darkness, nor the smell of pine in his nostrils and the feel of brush around his feet for the best office job in the world. He has absorbed enough of Nature to have the patience of Job, and he can sit with his back to a pine and ooze the kind of contentment that a Wall Street banker spends millions in a hopeless attempt to buy.

His love for Nature embraces all of the animals, even the two-legged ones who cause him the most worry.

He had rather be disliked for doing his duty, than liked for not doing it, but does his best to strike a happy medium. Sometimes he fails miserably and it worries him but the fact that he succeeds in most cases helps to console him. His greatest sorrow is that no matter how well he does his duty, he is still anathema to some honest people, who have drawn their impressions of him from an unfriendly source.

Most of all, Doakes resents the condescending attitude hunters and fishermen adopt in dealing with him. Most of them earn their existence in warm offices, are immune to wintry winds, blazing sun and high water. Because he has to take Nature in all her moods, they often feel superior to him. Perhaps by some standards they are. Frequently they earn more money, have more education and more leisure. But when Joe sees the tycoons and executives struggling through the brush or floundering around in a boat, he often wonders just who is really superior. Then he remembers the cave man, and how he had him whipped six ways to Christmas, and then he feels like a wizard.

If Doakes tells a game violator he is sorry he has to arrest him, he is either being socially conventional or hyprocritical. He isn't sorry; he is darn glad he caught him and wishes he could catch them all. He has never found a violator who had legitimate excuse for violating a game law, although most of them think they have. He knows that, except for a few technicalities, a good sportsman doesn't need a set of rules to keep within the law. Game laws are common sense and a good sportsman obeys them instinctively.

He knows that, excepting the chronic violator who earns his living despoiling Nature, there is no certain class of violator. A bank president is as apt to keep a seven-inch bass as an unemployed ditchdigger. But he always watches closely the gripers and grouchers. For experience has taught him that the man who gripes loudest and longest when he is subjected to a routine check is most likely to violate the law if he sees an opportunity to getting by with it.

Doakes also has on his list those irksome violators, who when caught, threaten dire consequences. They run the gamut from: "I'll have your job for this" to "I'm Colonel So-and-So, you can't do this to me."

Joe is an amiable person and had much rather pass the time of day with a friendly sportsman than sit on an unruly one, or a smart-aleck one—but he doesn't consider himself efficient until he can do both.

He hates for people to call him a "catfish Cop" but usually grins when they do.

Sportsmen through their clubs and periodicals are frequently given an opportunity to list the virtues they consider essential for a good warden. If Joe were give an opportunity to list the essentials of a good sportsman, the would probably run in this order

(1) Be as courteous to me a I am to you.

(2) Display game and licens without being asked when identify myself.

(3) Think of me as an aid t better hunting and fishing rathe than an obstacle to your huntin and fishing happiness.

Longer Duck, Geese Season Declared for Louisiana

(Continued from Page 1)

duck, and in addition 5 singly o in the aggregate of mallards, pintails or widgeons. Any perso at any time may possess not mor than 20 ducks in the aggregate o all kinds (not including America and redbreasted mergansers), bu not more than 1 wood duck, an in addition 10 singly or in the aggregate of mallards, pintails o widgeons. American and redbreasted mergansers, 25 singly o in the aggregate.

The daily bag limit on geese brant and white-fronted geese i 2 but not including blue or sno geese, and in addition 4 singly o in the aggregate of blue or sno geese, and in addition 4 singly o in the aggreate of blue and sno geese. Any person may posses not more than 4 geese, includin brant and white-fronted geese but not including blue or sno geese and in addition, not mor than 8 singly or in the aggregat of blue or snow geese.

PARISHES IN WHICH VIOLA TIONS OCCURRED IN JULY

Beauregard
Bienville
Calcasieu
Catahoula
Claiborne
Jefferson
Livingston
Madison
Natchitoches
Orleans
Ouachita
Tangipahoa
Tensas
Terrebonne
Vernon
Washington
Winn

Total 5

Among all American industrie those of the forest stand high a creators of national wealth.

Louisiana's Forest Grazing and Our Meat Supply

By R. S. CAMPBELL,
Southern Forest Experiment Station

This is essentially a progress report on the study of forest grazing in Louisiana begun last year and described by W. R. Chapline in the September 1943 LOUISIANA CONSERVATIONIST.

The National Feed and Meat Situation

The South is more and more coming to be recognized as a developing livestock region. Cattle raising has been an important agricultural enterprise in Louisiana and the Gulf States for more than 2 centuries. The industry expanded slowly until a few years ago when there was a sudden growth of interest as shown by increased numbers, better-quality herds, and more adequate care and feed provided on many farms.

The importance of forest grazing in Louisiana and other Southern States can be best appreciated against the background of the national wartime livestock situation. The United States in 1943 produced a record meat supply, about 24 billion pounds according to U. S. Department of Agriculture figures. Prospects are for somewhat increased production in 1944, allocations totaling about 24½ billion pounds. Seventeen percent of all this meat is allocated to the military. The boys are eating about twice as much as they do in civilian life. Some 12 percent is allocated to our allies and for foreign relief. These military and foreign requirements are expected to be about one-fourth higher in 1944 than last year. This leaves only 67 percent of this year's meat for United States civilians. Heavy-industry workers, with high incomes, want and need more meat, but civilian supplies are about one-third short, and therefore rationed.

Nearly half of our meat is beef and veal. How do we stand on present and prospective production in the United States and in the South? Cattle numbers on January 1 were estimated at 82.1 million head—an all-time high. This compares with the average of 67.4 million during the years 1937-41. In ordinary times the trend would have turned downward a couple of years ago but fairly abundant feed supplies and high prices have caused stockmen to build up their herds.

The present feed supply is not bright. The per-animal unit supply of grain is the lowest for 7 years, and is 20 percent below that on hand a year ago. Predictions of a scarcity of well-fed beef by summer are based on facts. However, with goals set up to reduce cattle numbers to 78 million by the end of 1944, range beef such as we grow in Louisiana should be relatively plentiful.

The Gulf States alone have about 12 million cattle, or nearly 15 percent of the national total, and grow about 10 percent of the country's beef—a substantial item in supplying wartime meat needs. Cattle numbers have increased in the South as elsewhere, approximately 20 percent in the past 5 years. The actual feed situation here is about the same as for the United States, Louisiana and many other Southern States being feed-importing areas with present livestock numbers.

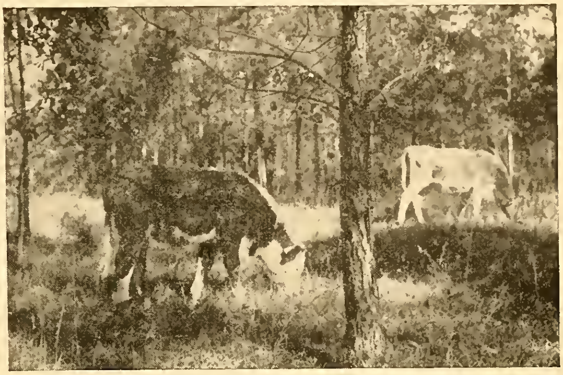
The potentialities are far different. Increase in improved pastures, some shift from cash to feed crops, and more effective use of forest range offer prospects that Louisiana Extension Service experts claim will justify a one-third increase in cattle numbers in the next few years. Most other parts of the country do not have such increased forage and feed potentials.

Increased meat and milk production in the South is very important in rural nutrition and farm economy. Most of us will get more meat and milk only if it is raised here. Furthermore, pastures and livestock offer both needed diversification and a way of meeting decreased labor supplies.

Results of the Louisiana Forest Grazing Survey

Increased interest in southern forest ranges and their importance in national wartime livestock production led to the establishment of the forest grazing project by Congressional appropriations in the fiscal year 1944. The work was started in the fall of 1943 with an extensive survey in cooperation with the Louisiana Agricultural Experiment Station.

The survey was concerned primarily with cattle grazing in the pine types, and covered 34 parishes, including northwest Louisiana, southwest Louisiana, the Florida Parishes, and also the free range parts of the Delta hardwoods.[1] Interviews were made with 118 farmers selected to show what improved practices are being used to secure better livestock production from forest ranges, and the main range problems needing experimental work. Since more than half of the State is in forest land and a comparable proportion of the farms surveyed is in forest, grazing on these lands appears to be a permanent part of the cattle-raising industry in Louisiana, but one which has been given little attention.



A fine Hereford calf with native cow grazing on protected pine-oak forest range, plenty of roughage for the winter. December 11, 1943.

Sixty-four percent of the operators interviewed use free range, although many have given up free range in recent years. Fenced control of forest range, frequently through nominal leasing arrangements between timber companies and local resident farmers, appears on the increase. This is a very important development needed to expand the economic base of the typical 40- to 80-acre farmer, to bring a better return to the landowner, and assure sustained forestry in Louisiana. As a rule, farmers in the fence-law parishes were providing more feed and producing more beef per head than those giving their cattle less care and only submaintenance feed, especially in winter, in the free range parishes.

Native forage includes mainly the broomsedges, wiregrasses, panicums, paspalums, and the like, along with the naturalized carpet grass on the more closely grazed areas and, in the northern part of the State, Bermuda grass. Cattle use forage in the pine types mainly during spring and summer, although more than half of the herds surveyed grazed in the forest yearlong. This is true particularly where there is a desirable combination of pine forest range for summer and bottomland hardwood forest range for winter.

Sixty-nine percent of the yearlong sustenance of herds surveyed is secured from forest range. The more dense pine stands in northwest Louisiana permit less forage than in the southwest and Florida Parishes where the tree stands are more open. Common practice is to feed cattle a concentrated protein supplement such as cottonseed meal and hulls through the worst winter months, usually from January to March inclusive, although the average feeding is a subsistence rather than a maintenance ration.

Our 1½ million acres of farm pastures in Louisiana are furnishing an increasing amount of forage—partly from increased acreage, but mostly from better practices of soil preparation, liming, fertilizing, mowing, and rotation grazing. Improved pastures are particularly needed for the midsummer dry period and during winter when pine forest range furnishes little real forage.

Field crops after harvesting, such as corn and hay fields, are used to finish off calves and other market animals for sale, and to start the breeding herds into the winter in good shape. Little dry lot feeding was found, either for maintenance or for fattening. Most cattlemen salt their cattle regularly, but only 29 percent of those interviewed furnish a mineral supplement to prevent or cure the creeps and other mineral deficiencies.

Most herds on forest range are either grade beef cattle or mixed grade and native. In parts of the State, particularly the Florida Parishes, it is common practice for dairy herds to graze on forest range during much of the year.

(Continued to Page 7, Column 1)

---

[1] Field work of the study was greatly facilitated by Robert R. Rhodes, Farm Forester, who was loaned to the Louisiana Agricultural Experiment Station for 3 months by the Louisiana State Division of Forestry and the U. S. Soil Conservation Service.

LOUISIANA WATER HYACINTH

(Continued from Page 3)

the use of such poisonous materials was prohibited by law. Boats equipped with spraying mechanisms dispersed arsenical solutions on the plants which within a fortnight died and sank. However, the tragic death of the boat captain in charge of the chief operating unit due to his accidental poisoning from the arsenic spray and the illness and subsequent recovery of twelve other members of the vessel's personnel, together with the danger to human beings and livestock along the sprayed waterways, led in 1937 to the complete abandonment of chemical attack.

Reference should be made to possible usefulness of ammonium sulfamate and sulfamic acid in plant control. These chemicals have been investigated by E. I. DuPont Nemours and Company, Wilmington, Delaware. Preliminary experiments indicate definite limitations in efficacy of these substances when applied to water hyacinth. Apparently the emerged structures are destroyed but unaffected stalks produce new sprouts. Further experiments with modified methods of application are desirable.

Wunderlich has very kindly provided the speaker with data regarding his experiments in the use of flame-throwers in water hyacinth control together with other observations that he made concerning the effect of fire on these plants.

It had been suggested to the speaker, that since there would obviously be available great quantities of expensive flame-thrower equipment when the war ends and since fuel used in these devices is relatively cheap, this means of water hyacinth control might prove useful.

Wunderlich's careful observations indicate quite otherwise.

Wunderlich states that the average flame-thrower that is presently being employed in combat, carries a charge that will last only fifteen seconds. It is used in battle in successive blasts of two to three seconds, developing a temperature of about twenty-four hundred degrees F. Undoubtedly modification could provide for civilian use greater fuel capacity.

Wunderlich, in one experiment, spread fifty gallons of high test gasoline in a dense growth of water hyacinths. Ignited, the gasoline burned intensely and in a matter of minutes all the exposed water hyacinth structures were completely charred. Within a week's time, however, unharmed, submerged water hyacinth parts produced new, green growth.

Wunderlich tested out the efficacy of a commercial weed-burner, an instrument costing about $12.00 per unit. This device, employing superheated and aerated kerosene, develops temperatures of between 2,000 to 3,000 degrees F. This flame was played over water hyacinth plants, which after a few days, resumed green growth.

Wunderlich then protected himself with a wooden shield and had this weed-burner project its flame on the surface of the water against him. He found that he could place his hand immersed from one inch to less than three quarters of an inch under the surface of the water upon which the flame was playing without perceiving any appreciable rise in the temperature.

Wunderlich further states that during a heavy freeze, last January, the emerged portions of water hyacinth beds in Bayou des Allemandes were superficially killed. Certain of these frozen and subsequently dried out beds, were set on fire. It was found that the burned over beds actually blossomed three weeks to a month earlier than the beds untouched by fire. It was evident that the combustion of these plant structures created a more favorable situation than did the normal decay of these plants. Decomposition evidently created conditions which delayed or partially inhibited growth.

Wunderlich informed the speaker that he also experimented with the use of fire in controlling that serious northern plant pest, the Water Chestnut, **(Trapa natans)**. He found that heat applied by flame-throwers or other means was valueless in checking the growth of this floating water plant.

Penfound, in discussing this matter with the speaker, indicated that in his opinion, flame-throwers could only be used successively in the control of alligator grass along the walls of bayous and cut ditches above the water line where the thermal buffering action of water is not a factor. He regards it as useless in water hyacinth work.

Wunderlich subsequently worked out mechanical units ranging in size from small vessels up to the eighty-foot long, twenty-four-foot wide mechanical unit, the U. S. Kenny. Before the outbreak of the present war the federal mechanical units operating in Louisiana from the Mississippi to the Texas border and north as far as Krotz Springs represented alone a capital investment of over half a million dollars.

Two basic methods are involved in mechanical water hyacinth work: First, the use of conveyor-equipped craft to deposit the water hyacinths on the banks where they perish and rapidly lose their ninety-five per cent of water content. Second, the use of craft equipped with crushing machinery so that the ground up water hyacinths incapable of vegetative reproduction are returned to the water.

The Wildlife and Fisheries Division of the Department of Conservation became deeply interested in the problem of controlling water hyacinths in streams which although of no navigable value were, or had once been, fine fishing waters.

The speaker secured the invaluable assistance of W. E. Wunderlich in working out the design of a water hyacinth control unit capable of being transported to any point to which an automobile could travel. The mechanical details of this unit are available to anyone wishing them. Essentially the apparatus consists of a twenty-foot-long, three-foot-wide conveyor operated at a chain speed of sixty feet per minute and with a capacity of twelve hundred square yards of vegetation per hour. The power required is extremely slight, being 3.8 horsepower at two thousand r.p.m. Details of the belt, roller chain, sprocket and gear construction are complicated. The whole conveyor is mounted on two automobiles wheels and is transported as a trailer attached to a truck. The truck is provided with a special crane for handling the three sheet-iron pontoons upon which the conveyor is mounted. The machine, in action, has an operating load of three thousand three hundred and sixty-four pounds. Two such machines were constructed for the Wildlife and Fisheries Division and, under the supervision of Major James Brown, Director of the Wildlife and Fisheries Division, they have been in successful operation for over two years. Each unit cost approximately fourteen hundred dollars and operates with a crew of a mechanical operator and eight laborers, the latter cutting the matted water hyacinth rafts with ditch slicers and feeding them into the conveyor. Using a simple cutting pattern, it is possible to have the water hyacinths move quite steadily onto the apparatus. The work of these machines has not only served to clear some of our fine Louisiana waters productive of both game and commercial fish but has also contributed greatly to solving some serious water hyacinth problems in the war defense areas.

The importance of such a program of water hyacinth control in post-war planning, both for providing employment and for increasing the revenues of the State, has been clearly brought to the attention of the Post-war Economic Development Committee in the work of which both Major Brown and the speaker are participating.

A word may be added in passing regarding the relationship of water hyacinth control to malarial mosquito control. Mr. John O'Neil, State Sanitary Engineer, State Department of Health of Louisiana, states:

"Under some conditions the water hyacinth seems to promote the development of **Anopheles quadrimaculatus,** the principal vector of malaria in this section of the country. It is likewise true, however, that at other places **Anopheles** are not found breeding among water hyacinths.

"As an example, during 1940, in Old Bayou, near Shreveport, heavy breeding of **Anopheles** was found, and the Caddo Parish Health Unit obtained the services of one of the Department of Conservation's water hyacinth control units and its crew to carry on extensive cleaning operations to remove the water hyacinths.

"It is considered that water hyacinths also are likely to provide breeding places for **Mansonia perturbans.**"

Biological control, often the best instrument in combatting biological pests, has thus far given little promise in the control of water hyacinths. The speaker has examined many instances where it was believed that water hyacinth mortality had resulted from biological action but in no case was anything of practical value found. Frequently enormously dense populations of mites belonging to the family **Hydrachnidae** occur on moribund water hyacinths, but microscopic investigation by the speaker failed to indicate that they were any other than incidental. It is obvious that should some specific organism be discovered capable of attacking and destroying water hyacinths, and water hyacinths alone, its annual value to the State of Louisiana would mount into the hundreds of thousands of dollars.

The speaker is particularly anxious to receive from anyone specimens of water hyacinths from any

(Continued to Page 8, Column 2)

FOREST GRAZING AND MEAT SUPPLY

(Continued from Page 5)

About 90 percent of the farmers interviewed are now practicing herd improvement, although the majority have taken up the practice within the last decade, particularly since the State was freed from cattle fever ticks. Bulls generally are either purebred or good grade beef type, although indications are that more bulls and a better distribution among the cows during the spring and summer would aid in increasing the calf crop.

Calf crops reported for 1943 were 50 percent, somewhat higher in northwest Louisiana, and lower in the southwest. These figures are below the State average, but this is to be expected of outfits grazing on forest range where control and care of animals cannot be as good as in farm pastures.

The effectiveness of adequate yearlong nutrition in greater beef production from forest range is illustrated by 2 farms included in the survey. The first farmer grazed his herd on fenced forest range in spring and summer, and on improved pastures for the rest of the year, with 2 pounds of cottonseed meal and 4 pounds of hulls per head per day for about 90 days in winter. In 1943, he raised 78 calves per hundred cows, calves weighed 355 pounds at 8 months, and herd death losses were only 2 percent. The second farmer, in contrast, ran his herd yearlong on free pine range, with inadequate winter feed, averaging only about ½ pound of cottonseed meal per head per day during January and February. As a result, calf crop in 1943 was only 35 percent, calves weighed 300 pounds or less, and herd death losses were 6.4 percent.

Death losses are rather high, and include such causes as starvation, railroad and highway accidents, bogging and drowning, disease, poison plants, and theft. Minor pests such as screwworms, stomach worms, grubs, ticks, and lice cause few death losses, but are a drain on livestock production that should be greatly reduced by better care.

Livestock handling facilities such as ample clean water, shelter against summer heat and winter cold, and boundary and cross fences, corrals, dipping vats, etc., are admittedly inadequate for good care of the animals, but with better-quality livestock and higher prices, improved facilities are gradually being installed and used. Livestock handling practices, such as castrating, dehorning, branding, and marking, are usually timed to avoid screwworms, although some stockmen market their calves early in the fall and do not apply these measures, except to brand replacement heifers.

Where does the next mouthful come from? Native cattle on cutover and freshly burned-over forest range in southwest Louisiana. No winter roughage left. December 8, 1943.

Most of the farmers interviewed oppose uncontrolled burning of forest range, stating that it damages both the grass and the trees and, in the hill lands, may allow serious erosion. However, there were local areas of strong sentiment for burning in parts of southeast and southwest Louisiana. The sentiment expressed in favor of fire protection was particularly noticeable in areas where action agencies such as the State Division of Forestry, the U. S. Forest Service, the Soil Conservation Service, and others have been urging and demonstrating fire protection for several years. A few farmers familiar with controlled burning, however, felt that in the longleaf pine type it benefits the grazing and is helpful in forest management, but only when carefully planned and controlled. Where ranges are properly stocked, or moderately stocked, cattle appear to do little damage to pine seedlings; in fact, such grazing may help to reduce competition from undesirable hardwoods. In the Delta, however, cattle may damage valuable hardwood seedlings during spring when buds are tender and growing. On the other hand, cattle grazing reduces the competition to the trees from grass, and also reduces the fire hazard. The farmers interviewed estimated an average of 27 percent reduction in fire hazard from forest grazing under moderate stocking. Such grazing not only removes grass but, over a period of years, changes the stand from such tall-growing species as broomsedge and wiregrass to less hazardous species as carpet grass and Bermuda.

The average small farm woodlot appears to be used by so many animals for summer shade and winter protection that it furnishes little or no forage and is far below its potential forest production. Maximum returns from these areas can be obtained only by limiting grazing to actual forage values, and practicing constructive forestry. On commercial forestry operations, including tree farms with large acreages, careful grazing can be of real benefit. It can furnish an income on clearcut land while trees are coming back to productivity, and reduce fire hazard on sustained yield forest tracts. Well-managed cattle grazing can diversify the operation, and furnish supplemental income.

Forest Grazing Problems and What Should Be Done

Important forest range problems mentioned by the farmers interviewed are wintering the cattle breeding herds; improved management, including season of use and grazing capacity; disease control, improved-quality animals, land control, and better coordination with farm pastures and feeds.

Most pressing forestry problems listed by farmers were fire protection, forest management, need for more land, and better land control.

With the preliminary survey completed and the results well on the way toward publication as a Louisiana Agricultural Experiment Station bulletin, the next step is to start experiments on the most important of these problems. The first is to work out seasons of grazing the different types of forest range for most effective use of the palatable vegetation. Forest range is the cheapest forage available and on thousands of farms is the key to development of more costly improved pastures and raising of farm feeds needed for seasons when the forest range is not suitable. Grazing capacity, forage utilization, livestock handling, range burning, are all pressing problems but can be studied only on a piecemeal basis with present funds. A large tract of experimental forest range, well-equipped and adequately staffed, is required for satisfactory solution of these problems in relation to good forest and farm management.

A SOLDIER'S APPEAL

If you've ever wondered if it's really worth while to fight for the conservation of our fish and game, we recommend that you read the V-mail letter from a hospitalized soldier in Burma that is reproduced in the current issue of Outdoors magazine. It carries a poignant message that every sportsman should read.

The soldier is Pfc. Dalton E. Merkel, in civilian life a sportsman. Now he's fighting for the very things that those of us at home are enjoying every day—and wondering if we are taking good care of things here for him while he's away.

Lying in a hospital "somewhere in Burma," Private Merkel wrote to Outdoors' editor: ". . . Of special interest to me always are your articles on conservation and wildlife restoration. If only there were some way of letting the people at home know how much they could help us by preserving the game resources of the country during this war, I would feel much better. There certainly are many fellows like myself who are waiting for the day to come when we can get out the favorite gun and fishing tackle again . . .

"It is hard for us to get much information over here on legislation or progress in regard to conservation. We would like to do our bit toward this great cause . . ."

Waiting for the day to come when he can go afield again with rod and gun is pretty dreary business for Private Merkel and the thousands of fighting men like him who had laid down their pet scatterguns and taken up the Springfield in defense of their country. It's our job to be sure there is a good supply of fish and game waiting for them when they do come marching home. Let's do the job!

An Idaho mine, discovered in 1942 to contain tungsten, has already become the nation's largest tungsten producer.

Forestry Rangers Hold Fire Control Training Session

The Louisiana Division of Forestry, under the direction of Massey H. Anderson, State Forester, held a three-day State-wide Fire Control training session for Rangers July 11-14, at Chemin-A-Haut State Park near Bastrop.

The three-day program included training on the use of a compass; pacing; map reading; care and maintenance of back pack pumps; and elements of forest management, including principles of marking trees for selective cutting and scaling timber.

Although there have been various training sessions throughout the different parts of the State during the past three or four years, this is the first time in the history of the Division of Forestry that all the Rangers of the State have met as a group.

This gave the Rangers the opportunity to meet one another and to discuss and exchange ideas on the various problems with which they are confronted.

The unique phase of the training session was that the outmoded lecture form of training was discarded for the modern principles of demonstration; group discussion; and actual practice to determine that the ideas had been assimilated and were understood.

In connection with the discussion of the elements of forest management, the group took a trip up to the Southern Forest Experimental Forest at Crossett, Arkansas, where various methods of forest management and cutting are being tested.

While much was accomplished from the viewpoint of fire control and general forest management, the group also managed to get in a little—play. The Rangers from North Louisiana and those from South Louisiana fought it out on a soft ball diamond. The result was one game apiece, after which each side agreed to call the whole thing a draw.

The following persons were present at this meeting:

State Forester, Massey H. Anderson; Chief of Fire Control, James E. Mixon; Assistant State Forester, W. M. Palmer; Assistant State Forester, Maxwell Chesson; Forester for Dendinger Lumber Company, E. J. Mead; Law Enforcement Officer, G. M. Edwards; District Forester, W. H. Henderson; District Forester, W. O. Crain; District Forester, R. E. Prestridge; District Forester, John F. Harrison; Assistant District Forester, Jack Gregory; Educational Assistant, Clyde Wheat.

Ranger, St. Tammany Parish, V. Blackwell; Ranger, St. Tammany Parish, H. Lewis; Ranger, St. Helena Parish, L. King; Ranger, Livingston Parish, W. Milton; Ranger, Washington Parish, R. Knight; Ranger, Evangeline Parish, S. Deville; Ranger, Allen Parish, N. Green; Ranger, Winn Parish, W. Allen; Ranger, Caldwell Parish, C. Hargrove; Ranger, Union Parish, D. Russell; Ranger, Morehouse Parish, J. Carpenter; Ranger, LaSalle Parish, H. Hodges; Ranger, Jackson Parish, G. Thomas; Ranger, Bossier Parish, E. DeMoss; Ranger, Bienville Parish, F. Caskey; Ranger, Red River Parish, J. W. Smith; Ranger, Sabine Parish, J. Z. Edwards; Ranger, DeSoto Parish, C. Mustin; Ranger, Natchitoches Parish, H. Rogers.

Economic Status Of Water Hyacinth

(Continued from page 6)

area wherein sudden wide-spread death of water hyacinths occurs. Such specimens should be preserved in formalin in the proportion of one part of formalin to nine parts of water and shipped to the Department of Conservation. Additional plants should be held by the sender in a living condition so that, if laboratory examinations reveal the presence of significant parasites. Living specimens could thereafter be obtained.

It is hoped that this brief survey of the water hyacinth problem will bring to wider attention the profound economic seriousness of this introduced Japanese plant.

REFERENCES

Martin, A. C., and F. M. Uhler—
1939. Food of Game Ducks in United States and Canada. Tech. Bul. No. 634, pp. 1-147, 153 pls.

Penfound, Wm. T.—
1940. The Biology of Achyranthes philoxeroides (Mart.) Standley. The American Midland Naturalist, Vol. 24, pp. 248-252.
1942. Relation of Plants to Malaria Control. Public Health Reports, Vol. 57, pp. 261-268.

Wunderlich, Wm. E.—
1938. Mechanical Hyacinth Destruction. The Military Engineer, Vol. 30, pp. 5-10.
1941. Machines Combat Aquatic Growth. The Military Engineer, Vol. 33, pp. 517-521.

Gray squirrels have been observed chipping the loose bark on white oak trees and eating the geometrid caterpillars found under it.

FISH RESCUE WORK UNDER WAY IN EAST CARROL

The pictures above illustrate one method used by the Department of Conservation in rescuing untold numbers of game fish throughout the State each year. The Wildlife and Fisheries Division, under whose supervision this work is being done, has two fish rescue trucks at this time engaged in this work.

These trucks have been equipped with oxygen tanks and the fish are taken from the water, placed in the oxygen tanks and carried to the various lakes and streams where they are released without being touched with the hand. The pits, from which the fish are taken, are being drained and naturally thousands of them would have died had they been left there.

Fish rescue work is now under way in Lake Providence in East Carroll Parish. Up to August 1st, a total of 10,183 white perch weighing 1,321 pounds, and 424 black bass, weighing 254 pounds have been saved while 971 other game fish weighing 241 pounds have been rescued. The grand total is 11,583, and they weighed 1,662 pounds.

TYPES OF VIOLATIONS WHICH WERE MADE DURING JULY

Angling without license	14
Possessing undersize game fish	3
Using illegal tackle to catch game fish	12
Commercial fishing without license	2
Possessing undersize commercial fish	2
Commercial fishing, illegal tackle	1
Possessing undersize shrimp	3
Catching and possessing shrimp in closed season	13
Dredging oysters on State reef	2
Total	52

AGENTS PARTICIPATING IN JULY ARRESTS

Percy Brossett, Ernest Coats, Fred Cook, Mark B. Cooper, Leslie Davis, Ruben Davis, G. W. De Loach, D. L. Farrar, Jno. W. Foolkes, Jno. W. Gilbert, E. B. Head, Lesma Hebert, Clarence Hood, W. J. McCauley, Jas. R. McFerrin, T. E. Minton, Armand Petit, Cliff Reeves, Lawrence Sintes, Allen D. Swayze, Oliver Taunton, Frank Trocchiano, Paul Voitier, Hector Waguespack, L. C. Weaver, Elton Williams.

For thousands of years all the sea-borne commerce in the world was carried in ships made of wood.

DUCKS UNLIMITED, INC.

(Make checks payable to Ducks Unlimited and mail them either to A. C. Glassell, Box 73, Shreveport, or Ralph Nicholson, Publisher Item, New Orleans.)

I hereby subscribe to Ducks Unlimited, Inc., the sum of $________.

____

____

____

Contribute in accordance with your means. Deductible for Income Tax.